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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,051	11/21/2001	Kevin M. Ferguson	7217 US	4466

66638 7590 09/21/2007  
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EXAMINER
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TRAN, TRANG U

ART UNIT	PAPER NUMBER
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2622

MAIL DATE	DELIVERY MODE
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09/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/992,051

Applicant(s)

FERGUSON, KEVIN M.

Examiner

Trang U. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed June 27, 2007 have been fully considered but they are not persuasive.

In re page 3, applicant argues, with respect to claims 1, 3 and 5, that Faroudja does not describe "up-sampling the slower rate video signal to [any] desired rate" because Faroudja's line-doubler does not provide "any desired rate" from the slower rate video signal.

In response, the examiner respectfully disagrees. It is noted that claims 1, 3, and 5 do not recited any alleged "any desired rate" but recited "desired rate". Faroudja discloses in col. 5, lines 56-65 that "Referring again to FIG. 1A, in the case of an NTSC input signal, the input is 525 lines every 1/30 sec. The line doubler doubles, or approximately doubles, the number of scanning lines per field, 1/60 sec in NTSC, and performs motion correction on the incoming video, thereby increasing the apparent resolution of the picture..." The line-doubler of Faroudja does up-sampling the slower rate video signal to a desired rate as claimed.

In re page 3, applicant argues, with respect to claims 1, 3 and 5, that Faroudja does not describe "adaptively filtering the up-sampled shower rate video signal using a human vision model to reduce the smooth interpolated video signal" because Faroudja gives no indication whatsoever that non-linear enhancer 110 is "adaptive" in any way.

In response, the examiner respectfully disagrees. Faroudja discloses in col. 10, lines 51-56 that "FIG. 6 shows a block diagram of a non-linear enhancer suitable for use

in the embodiments of FIGS. A and 1B. Video motion-adaptive line doubler 106 (FIGS. 1A and 1B) on input line 242 is applied in parallel to a delay element 244 and a non-linear enhancement generator 246). Since the output of the **motion-adaptive** line doubler is inputted to the non-linear enhancement, the non-linear enhancement is considered to be **adaptive**. Thus, the claimed "adaptive filtering" is anticipated by the non-linear enhancer because the input of the non-linear enhancer is adaptive.

In re page 4, applicant argues, with respect to claims 2, 4 and 6, that one of ordinary skill in the art would understand Zhu's restoration of full vertical resolution to be completely different from the claimed "restoring a direct current level of a video signal because a DC restorer is "a circuit used in picture monitors and waveform monitors to clamp one point of the waveform to a fixed DC level".

It is noted that claim limitation is interpreted as broad as possible. When the claimed "restoring a direct current level for the smooth interpolated video signal" is given its broadest interpretation, the claimed "restoring a direct current level for the smooth interpolated video signal" read on Zhu's restoration of the full vertical resolution.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipate by Faroudja (US Patent No. 5,428,398).

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In considering claim 1, Faroudja discloses all the claimed subject matter, note 1) the claimed an apparatus for providing a smooth interpolated video signal at any desired rate from a slower rate video signal (color television system of Figs. 1A-1B) means for up-sampling the slower rate video signal to the desired rate is met by the motion-adaptive line doubler 106 which doubles any input formats (Figs. 1-2, col. 5, lines 25-65), and 2) the claimed means for adaptively filtering the up-sampled slower rate video signal using a human visual model to produce the smooth interpolated video signal is met by the non-linear enhancer 110 which substantial suppression of all visually annoying artifacts, achieves a viewer-perceived picture quality (human visual model) that is substantially better than would result if image enhancement and sharpening were not provided (Figs. 1A-1B, col. 3, lines 34-64 and col. 5, line 66 to col. 6, line 62).

Claim 3 is rejected for the same reason as discussed in claim 1.

Claim 5 is rejected for the same reason as discussed in claim 1.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faroudja (US Patent No. 5,428,398) in view of Zhu et al. (US Patent No. 6,069,664).

In considering claim 2, Faroudja discloses all the limitations of the instant invention as discussed in claim 1 above, except for providing the claimed further comprising means for restoring a direct current level for the smooth interpolated video signal. Zhu et al teach that the PTI converter 10 and ITP converter 20 provide the restoration of the full vertical resolution corresponding to a progressive video signal from a conventional interlaced video source produced by any progressive film scanner or other similar device where at least one of the horizontal scan lines have been repeated or replaced with a constant value (Fig. 1, col. 8, lines 20-56). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the restoration of the full vertical resolution as taught by Zhu et al into Faroudja's system in order to preserve the vertical resolution of a progressive film scan system and maintains (NTSC) interlaced video signal output for backward compatibility with existing recording equipment and standard video interfaces in the broadcasting and consumer electronics industry.

Claim 4 is rejected for the same reason as discussed in claim 2.

Claim 6 is rejected for the same reason as discussed in claim 2.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (571) 272-7358. The examiner can normally be reached on 8:00 AM - 5:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 17, 2007

  
TRANG U. TRAN  
PRIMARY PATENT EXAMINER